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IDEA 0646-68
Copy 2 of 8

5 September 1968

MEMORANDUM FOR THE RECORD

SUBJECT: Visit to Detachment G, 21-23 August 1968;
S1010 PPA Discussion

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1. The undersigned met with Project IDEALIST pilots at Detachment G for the purpose of discussing the S1010 suit problems and criteria. Present at this meeting, in addition to the undersigned, were:



25X1

2. [redacted] was shown to the pilots and discussed with them. The main point of the meeting was then covered--establishment of basic criteria for the S1010 suit. The undersigned stated that the only comparisons that the pilots should use would be that between their present partial pressure suit in the U2C and the S1010 in the U2R. They were not to compare the S1010 with the B901 suit.

3. The pilots and the undersigned then had a round-table discussion from which was established the following points, criteria and guidelines for qualifying the S1010 PPA in the U2R:

a. Fit: There seemed to be quite a disparity in the suit-fit standards. One pilot, for instance, had his glove tips hitting the end of his fingers, while another's fingers and glove tips were separated up to an inch. Careful attention should be given to each pilot's desires; it is imperative each pilot be given the best possible fit.

USAF review(s) completed.

25X1

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SECRET

SECRET

25X1

IDEA 0646-68

Page 2

b. Visibility: With the S1010 helmet, the fit again is the most critical area. It is understood that by moving the face forward, the visibility will increase; however, on a long-term basis, investigations should continue to improve the helmet's visibility restrictions that are now present.

c. Mobility: This is again of major concern to the pilots. They recognize that when properly fitted, mobility should increase. However they still feel, and I agree, they need as little neck ring friction as can be safely allowed. They would, of course, like the 901 helmet [redacted] (at least) particularly as it is within eight ounces of the S1010 helmet weight. In any event, neck ring friction should be an item, like that of visibility, for continuing development.

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4. Even with a good fit, the pilots must have minimum criteria for visibility and mobility restrictions in the cockpit. These criteria are defined as follows:

a. With pilot's eyes centered drift sight, he should, by eye movement alone, see all of the forward instrument panel.

b. With ease of head and body movement (no hand assist to helmet), the pilot should be able to see all instruments and controls on the side panels back to the map case areas on the right and left sides of the cockpit. By straining, the pilot should be able then to see the current breakers, etc., behind that point.

c. Upward Visibility: The pilot should be able to see upwards and back to the edge of the black area of the canopy.

d. There is no absolute requirement for the pilot to see the front of his suit; however, if it could be made possible by adjustment, seeing of the pilot's personal connections would be in the "nice-to-have" category.

e. In a pressurized state, the pilot must have the visibility and mobility to be able to see and reach every instrument and control from the UHF on the left side panel of the cockpit, through the front instrument panel, to the drift sight control on the right side of the cockpit.

25X1

SECRET

SECRET

25X1

IDEA 0646-68

Page 3

5. In addition to the above mentioned comments, this meeting also involved discussions on cockpit changes. These changes, in conjunction with the proper fit of the S1010 suit, will make the flying of the U2R considerably safer and easier for the pilots.

- a. Transpose the HSI and TDI instruments.
- b. Move the oxygen gage to a position just behind the throttle for better visibility and control.
- c. The nose pressurization shut-off control lever extended. The small pilots can not reach this valve in a pressurized state.
- d. The cabin heat control should be moved to a position on the center panel, above the rudder well. The arm ring on the suit hits the throttle when pilots reach for the heat control in its present position.
- e. If possible the leg retention bat wing of the seat should be trimmed down. This will allow for the arm ring to pass through this seat to wall area and therefore give the pilot more contortability in this area.
- f. The TACAN should be moved forward of the ADF and ILS control heads and these two instruments moved back.

6. CONCLUSION: It is the opinion of the undersigned that there is no real problem with the S1010 suit. There were a myriad of minor problem areas (fit primarily) that were and are to be expected with the advent of new equipment into a flying organization. The major area of concern is that too many people became involved in the discussions, etc., on the pressure suit problems. This multiple involvement actually clouded the issues unnecessarily.

25X1

SECRET

25X1

SECRET

IDEA 0646-68

Page 4

7. RECOMMENDATIONS:

a. It is recommended that the criteria for qualifying the S1010 suit (Para 4 above) be the only criteria used.

b. It is recommended that the cockpit changes (Para 5 above) be incorporated as indicated.

c. It is recommended that one of the Detachment G mission pilots be appointed as the S1010 PPA Project Officer for the remainder of the suit's qualification period.

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Chief, Special Action Staff, OSA

CONCURRENCE:

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Deputy for Operations, OSA

9 Sep '68
(Date)

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Research and Development, OSA

12 Sept '68
(Date)

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Director, Special Activities

13 Sept 68
(Date)

* Cockpit changes are feasible and can be accomplished without degradation of other systems/environments.

25X1

SECRET

SECRET

25X1

25X1

IDEA 0646-68

Page 5

SAS/O/OSA/

- 1 - D/SA
- 2 - DD/SA
- 3 - D/O/OSA
- 4 - LSD/R&D
- 5 - SAS/O/OSA
- 6 - D/M/OSA
- 7 - Compt/OSA
- 8 - RB/OSA

25X1

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